EUROPEAN COMMISSION
Information Society and Media Directorate General

Lisbon Strategy and Policies for the Information Society
Lisbon Strategy and i2010

Use of Computers and the Internet in Schools in Europe 2006

Country Brief: Greece

6 / 2 0 0 6

Key findings

Basically all Greek schools are equipped with computers and the internet and their use is steadily improving. However, the level of equipment leaves substantial room for improvement. Only 13% use the internet via a broadband connection. With this figure Greece ranks at the very bottom of the 27 countries participating in the survey.

Only 36% of Greek classroom teachers had used computers in class in the 12 months prior to the survey, with some variation across school types and between urban and rural areas. With this very low figure, Greece finds itself at the tail end in Europe.

The survey results show that once Greek teachers have started to use ICT in class they do not seem to differ from other European teachers in their ICT usage behaviour in schools

However, a very high 64% of teachers in Greece still do not use computers in class. When asked for the most important barrier, three issues gain the highest ratings among this group of teachers: 50% state a lack of computers in their schools as an important barrier, 32% express the opinion that teachers lack the necessary skills to utilize computers in their teaching and 22% argue that their subject is not suitable for being taught via computers.

This results in a situation where the statement "lack of equipment in school" is expressed by a very high 32% of all Greek teachers.

However, the vast majority of teachers are convinced of the benefits of ICT use in class. Only 2% are not convinced of any benefits of using computers in class. Only in a few other countries are teachers even more in favour of ICT use in schools.

"Lack of interest" in ICT use is an issue among teachers for only 5% of the Greek teachers.

It appears that action is urgently required in the area of ICT equipment improvement in Greek schools. Although virtually all schools are equipped with at least some computers in Greece, the above results suggest substantial scope for further ICT equipment installations and ICT-infrastructure improvements (only 13% of schools have a broadband internet connection) in Greek schools such as an increase of the number of computers in total and per pupil. On the latter indicator, Greece with 7 computers per 100 pupils ranks dramatically below the European average of 12.

Primary school teachers (65%) and lower secondary teachers (66%) seem to be less ICT competent than those in upper secondary (62%) and vocational schools (37%). This compares to a European average of 42% and shows another weakness in ICT equipment and use in Greek schools.

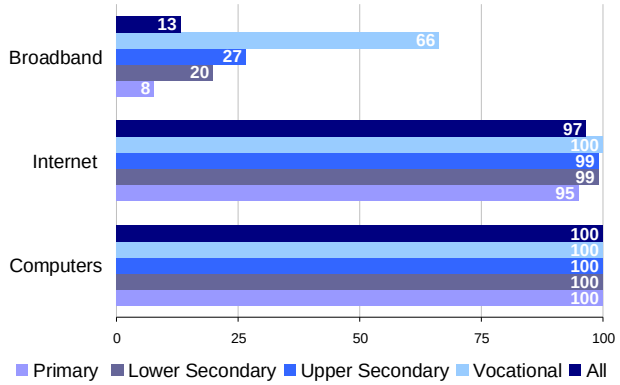
Greece still has a long way to go to reach the usage levels of the other Western European countries and even several new member states.

ICT Equipment and Internet in Schools

Basically all Greek schools now use computers for teaching and have internet access. However, only 13% use the internet via a broadband connection. With this figure Greece ranks at the very bottom of the 27 countries participating in the survey. There is a large variation between school types: while only 8% of primary schools have a broadband internet connection, the penetration is highest among vocational schools, with 66%. There is also variation with regard to broadband access between urban and rural areas: 16% of schools in densely populated areas have broadband access compared to 22% in intermediate and just 7% of schools in thinly populated areas.

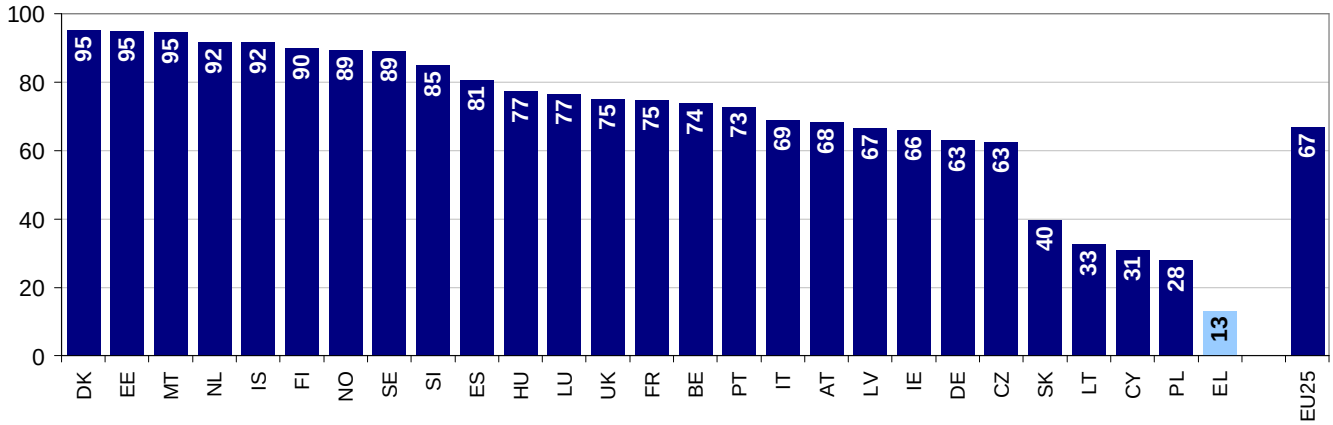
ISDN is the internet connection still in use by 76% of the schools in Greece. With this figure, the country ranks top in Europe and achieves a figure which is more than four times the EU25 average.

Percentage of Schools Using Computers, Internet Connection, and Broadband Internet Access According to School Type in Greece 2006



Source: *LearnInd HTS 2006;* ***Base:*** *All schools;* ***Question:*** *Computers: Q6; Internet, Broadband: Q9. See questionnaire for exact wording.* ***NOTES:*** *Please note that HTS data for Greek vocational schools is based on only 49 responses.*

Percentage of Schools with Broadband Internet Access in Europe 2006



Source: *LearnInd HTS 2006;* ***Base:*** *All schools;* ***Question:*** *Q9. See questionnaire for exact wording.*

Only 37% of schools have a website, 44% offer e-mail to teachers, and only 6% do so to pupils. Only 18% of the Greek schools using computers for teaching use them in classrooms with the highest percentage being achieved in primary schools (25%) and 0% in vocational schools.

Those schools with a broadband connection to the internet are much more likely to have a more sophisticated ICT infrastructure including a school website, the use of a LAN or the availability of an intranet.

The use of Computers and the Internet in Schools

Computers are used for various purposes and as part of teaching different subjects in schools but also and very widely as a separate subject.

Computer sciences are taught as a separate subject in 78% of Greek schools. In lower and upper secondary and vocational schools this is the case in almost all schools, according to the statements made by Greek head teachers. In primary schools almost two third of the schools teach it as a separate subject.

Only 36% of Greek classroom teachers had used computers in class in the 12 months prior to the survey with some variation across school types and between urban and rural areas: the higher the school level, the more teachers make use of ICT in class. With this very low figure, Greece finds itself at the tail end in Europe with only one exception, Latvia, showing even lower usage figures.

The usage intensity is rather equally spread across all categories, i.e. the share of those teachers using computers in less than 5% of their lessons is at the same level (22%) as for those using it in more than half of their lessons.

These figures are around the European average which shows that once Greek teachers have started to use ICT in class they do not seem to differ from other European teachers in their ICT usage behaviour in schools

ICT equipment in Greek schools 2006

			Educational Level (EL)				Type of locality (EL)			Internet Access (EL)	
	Total EL	Total EU25	Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated	Narrow-band	Broadband
Computers per 100 pupils [a]	6.5	11.3	4.8	6.6	9.0	*19.9**	5.9	6.7	8.3	5.8	9.5
... of which internet connected	5.9	9.9	4.2	6.1	8.3	19.1	5.3	6.4	7.3	5.2	9.1
Percentage of schools having...											
Computers for teaching [b]	100.0	98.7	100.0	100.0	100.0	*100.0**	100.0	100.0	100.0	100.0	100.0
Internet access [c]	96.6	96.2	95.0	99.1	99.1	*100.0**	98.6	100.0	92.9	100.0	100.0
Broadband internet access [d]	13.2	66.9	7.8	19.8	26.6	*66.3**	15.9	22.2	6.7	0.0	100.0
A website [e]	36.8	63.0	28.1	51.0	53.6	*63.8**	42.7	48.1	25.5	36.2	50.2
An e-mail address for the majority of teachers [f]	44.2	65.2	46.5	37.0	46.3	*35.5**	37.7	58.4	47.6	45.5	47.4
An e-mail address for the majority of pupils [g]	6.1	23.5	5.0	9.2	11.0	*23.1**	7.1	5.6	5.1	5.5	11.9
A LAN [h]	50.3	55.2	36.8	69.3	72.0	*88.6**	59.3	50.8	38.6	48.3	75.8
An intranet [i]	10.4	40.8	5.8	21.3	15.2	*30.1**	14.5	7.1	6.3	8.9	22.6
An external support or maintenance contract [j]	43.9	47.1	39.9	58.7	46.4	*43.5**	49.6	40.4	37.8	44.0	54.4
Percentage of schools using computers for education in…											
Computer labs [k]	84.0	80.5	74.1	99.0	100.0	*100.0**	93.5	98.0	67.2	83.9	94.6
Classrooms [l]	17.8	61.4	24.5	5.9	8.1	*0.0**	11.1	12.2	28.2	17.9	9.6
School library [m]	7.1	33.4	4.5	8.9	16.7	*13.5**	8.1	4.6	6.7	6.4	13.8
Other locations accessible for pupils [n]	8.2	27.0	9.2	2.9	10.8	*6.8**	6.1	5.1	12.0	7.5	13.1

Source: *LearnInd HTS 2006;* ***Base:*** *a: all pupils; b-j: all schools, k-n: schools using computers for educational purposes for pupils (cf. index b);* ***Question:*** *a: Q4, Q6, Q7; b: Q6; c: Q9; d: Q9; e-j: Q12; k-n: Q8. See questionnaire for exact wording.*

Only 37% of schools have a website, 44% offer e-mail to teachers, and only 6% do so to pupils. Only 18% of the Greek schools using computers for teaching use them in classrooms with the highest percentage being achieved in primary schools (25%) and 0% in vocational schools.

Those schools with a broadband connection to the internet are the more intensive ICT users in terms of availability of a school website, the use of a LAN or the availability of an intranet.

Use of computers in class in Greece 2006

Assessments of the head teacher		Total EL	Total EU25	Educational Level (EL)				Type of locality (EL)			Internet Access (EL)	
				Primary	Lower secondary	Upper secondary	Vocational **)	Densely populated	Inter-mediate	Thinly populated	Narrow-band	Broadband
Computer sciences taught as separate subject	Agree	77.8	54.7	64.1	99.1	100.0	*92.2**	85.1	79.2	68.0	76.3	92.1
	Disagree	22.2	43.7	35.9	0.9	0.0	*7.8**	14.9	20.8	32.0	23.7	7.9
	Don't know	0.0	1.6	0.0	0.0	0.0	*0.0**	0.0	0.0	0.0	0.0	0.0
Computers and the internet are												
integrated into teaching of most subjects	Agree	41.7	75.3	42.1	28.3	51.5	*88.3**	38.9	49.7	42.4	41.8	42.7
	Disagree	58.3	24.1	57.9	71.7	48.5	*11.7**	61.1	50.3	57.6	58.2	57.3
	Don't know	0.0	0.6	0.0	0.0	0.0	*0.0**	0.0	0.0	0.0	0.0	0.0
used for teaching traditional subjects or basic skills	Agree	48.1	75.8	51.9	36.9	50.5	*53.1**	45.6	48.5	51.2	47.5	49.5
	Disagree	51.5	22.8	47.7	60.9	49.5	*46.9**	54.4	50.0	48.2	52.5	47.3
	Don't know	0.4	1.4	0.4	2.2	0.0	*0.0**	0.0	1.5	0.6	0.0	3.3
used for teaching foreign languages	Agree	37.9	56.6	41.6	36.8	35.2	*40.1**	36.7	49.9	35.4	38.4	39.3
	Disagree	61.1	40.1	56.9	63.2	64.8	*59.9**	63.3	50.1	62.1	60.7	60.7
	Don't know	0.9	3.3	1.5	0.0	0.0	*0.0**	0.0	0.0	2.4	0.8	0.0
used for coping with students with special needs/ handicaps	Agree	20.3	71.7	23.3	20.3	9.8	*19.8**	19.4	16.0	23.1	21.2	13.2
	Disagree	76.1	23.7	72.1	78.7	88.4	*72.7**	79.4	81.7	70.1	75.4	84.8
	Don't know	3.5	4.6	4.6	1.0	1.8	*7.5**	1.3	2.3	6.9	3.4	2.0

Source: *LearnInd HTS 2006;* ***Base:*** *All schools using computers for educational purposes for pupils;* ***Question:*** *Q13: "To what extent do you agree or disagree with the following statements regarding the educational use of computers and/or the internet in your school?"*

A majority (50%) of teachers using computers use them in less than 10% of all lessons. Only 8% state that they use computers in more than half of their lessons. However, teachers in primary schools differ substantially from their counterparts in upper level schools since they are the most intensive users in the lower usage categories of ICT use in up to 25% of the lessons. Vocational school teachers seem to be the most frequent and intensive ICT users, with 66% using ICT in more than half of their lessons, which is three times higher than the national average in this category.

Greek teachers using computers do not restrict themselves to a particular source of information but use a multitude of different material from a variety of sources for teaching purposes, which in most categories is around or slightly below the European average.

The learning material that is used most by Greek teachers includes offline learning materials such as CD-ROMs. This applies to 83% of teachers. Other sources are used less. About 68% of teachers each use pedagogical material from established online sources and 55% material that is made available on the schools' network and databases.

As in most other countries in Greece the statement is true that the older the teachers (indicator used here: years of teaching experience), the less use they make of computers and the internet in schools.

A very high 64% of teachers in Greece still do not use computers in class. When asked for the most important barrier, three issues gain the highest ratings among this group of teachers: 50% state a lack of computers in their schools as an important barrier. Overall, “lack of equipment in school” is expressed by a very high 32% of all Greek teachers.

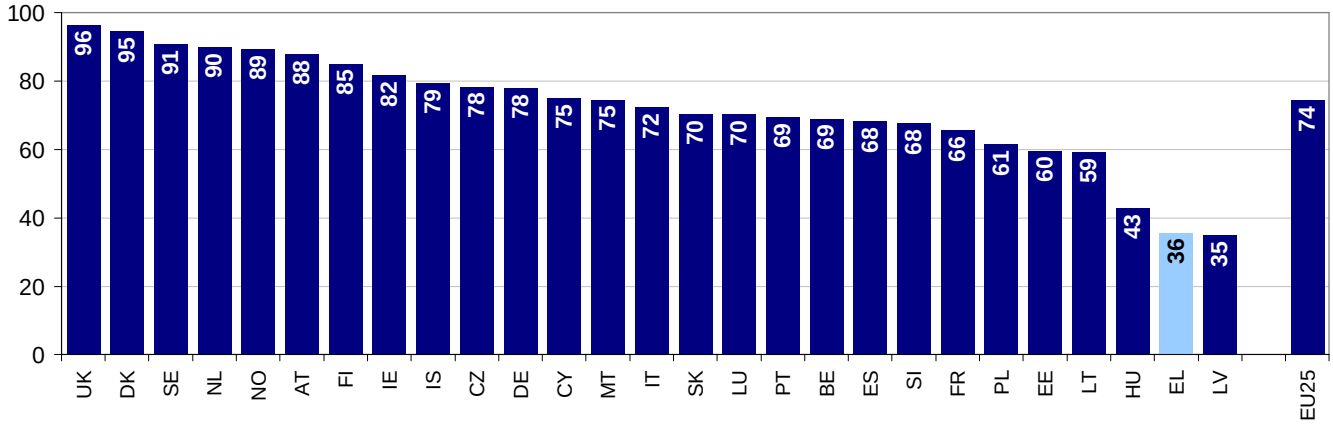
32% express the opinion that teachers lack the necessary skills to utilize computers in their teaching. This does not come as a surprise, since almost a third of the Greek teachers do not have any ICT use experience. This figure is almost five times the European average.

Finally, 22% argue that their subject is not suitable for being taught via computers.

However, the vast majority of teachers are convinced of the benefits of ICT use in class. Only 2% of all teachers and also a very low 3% of those not using ICT are not convinced of any benefits of using computers in class. Only in very few other countries are teachers even more in favour of ICT use in schools. Also “lack of interest” in ICT use does not seem to be an issue among teachers. For only 5% of the Greek teachers does this seem to be an issue.

It appears that action is urgently required in the area of ICT equipment improvement in Greek schools. Although, virtually all schools are at least equipped with some computers in Greece, the above results suggest substantial scope for further ICT equipment installations and ICT-infrastructure improvements (only 13% of schools have a broadband internet connection) in Greek schools, such as an increase of the number of computers in total and per pupil. On the latter indicator, Greece with 7 computers per 100 pupils ranks dramatically below the European average of 12.

Percentage of teachers who have used computers in class in the last 12 months (2006)



Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7. See questionnaire for exact wording*

Teachers' use of computers in class in Greece 2006

Percentage of teachers who ...	Total EL	Total EU25	Educational Level (EL)				Type of locality (EL)			Years of teaching experience (EL)			
			Primary	Lower secon-dary	Upper secon-dary	Voca-tional	Densely popu-lated	Inter-mediate	Thinly popu-lated	<5 y	5-9 y	10-19 y	20+ y
...have used computers in class[1]	35.6	74.3	32.8	38.0	44.1	58.0	32.4	42.4	37.3	49.6	44.3	41.9	26.3
...use a computer in class to present or demonstrate	27.7	63.4	24.7	28.9	38.9	47.8	24.7	34.2	29.2	40.0	39.3	29.9	20.0
...have pupils use a computer in class	23.1	66.3	19.6	28.7	30.1	55.4	23.1	28.5	21.4	32.7	26.5	28.6	17.0

Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7 "How have you used computers and/or the internet for work in the last 12 months?"*

Frequency of computers use in class Greece 2006

Percentage of all teachers *using computers in class* who ...	Total EL	Total EU25	Educational Level (EL)				Type of locality (EL)			Years of teaching experience (EL)			
			Primary	Lower secon-dary	Upper secon-dary	Voca-tional	Densely popu-lated	Inter-mediate	Thinly popu-lated	<5 y	5-9 y	10-19 y	20+ y
...use computers in 5% and less of all lessons	21.9	18.5	26.3	20.1	20.0	*0.0**	21.5	14.6	25.2	8.4	16.4	20.3	32.8
in 6 to 10% of lessons	18.3	22.5	24.0	15.4	7.6	*4.4**	17.3	16.5	20.1	15.6	12.7	25.1	17.3
in 11 to 24% of lessons	14.9	22.2	18.4	12.6	7.6	*6.9**	11.7	14.0	18.6	15.2	18.2	12.1	15.2
in 25 to 50% of lessons	23.0	20.2	23.8	21.9	23.2	*22.8**	23.3	17.0	24.9	25.0	18.6	21.3	25.4
more than 50% of lessons	21.9	16.5	7.6	30.0	41.6	*65.9**	26.2	37.8	11.2	35.8	34.1	21.3	9.3

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class, "don't know" answers excluded;* ***Question:*** *Q9 "For what percentage of time have you used computers and/or the internet in class when teaching your main subject(s) in the past 12 months?"*

Source of educational material used in class in Greece 2006

Percentage of all teachers *using computers in class*[2] who ...	**Total EL**	**Total EU25**	**Educational Level**				**Type of locality**		
			Primary	**Lower secondary**	**Upper secondary**	**Vocational**	**Densely populated**	**Inter-mediate**	**Thinly populated**
...use material they have searched the internet for	75.2	82.7	78.7	72.2	71.7	*81.7**	72.1	81.9	76.1
...use existing online material from established educational sources	68.1	74.2	71.6	66.4	66.4	*63.8**	65.9	68.1	70.5
...use material that is available on the school's computer network or database	54.9	63.1	58.8	51.9	51.1	*57.0**	59.5	54.8	50.1
...use electronic offline material (such as CD ROMS)	82.9	83.0	88.3	77.3	75.4	*79.5**	81.1	84.1	84.4
...use other learning material when using computers in class	2.1	8.8	0.6	1.4	5.8	*0.0**	4.1	1.8	0.0

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class;* ***Question:*** *Q10 "Which of the following types of materials have you used when teaching your main subject(s) with the aid of a computer and/or the internet?"* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases.*

Comparison of the situation in 2001 and 2006[3]

In Greece the percentage of schools using computers for educational purposes has risen over the past 5 years from an already high 72% in 2001 to 100% in 2006.

While in 2001 one hundred pupils had to share 5 computers the figure rose to 7 by 2006, an improvement of a third. However, Greece remains to stay at a level which is significantly below the European average of 12.

Schools have started to move over to broadband; only 11% (EU25: 45%) of schools in Greece are connected to the internet via a DSL connection in 2006. The figure for 2001 was 0% (EU15: 5%). There is still a large backlog on broadband connection in Greece.

Schools have also strongly increased the quality of ICT use: while in 2001 15% (EU15: 44%) of the schools in Greece had their own website, the figure is now 37% (EU25: 62%). Also the use of a LAN – which was used by 18% (EU15: 47%) of the Greek schools – is now up to 50% (EU25: 54%). But Greece still has a long way to go to reach the usage levels of the other Western European countries and even several new member states.

Attitudes on the Usefulness of ICT use in Teaching

Greek schools are equipped with computers and the internet and their use is steadily improving. However, the level of equipment leaves substantial room for improvement.

The share of teachers in Greece – but also in the European Union in general – who believe that computers and the internet should not at all be used in schools, is very low and even in Greece only at 1%. Greek teachers have positive attitudes about the different applications of ICT in teaching but still achieve figures on attitudes that ICT should be used for letting pupils do exercises and practise (62%), letting pupils retrieve information in a self-directed manner (70%) and for collaborative and productive work by pupils (76%) which are below the European average. There are only small differences across school types.

A minority of Greek teachers (32%) believes that teaching about office tools should be an integral part of the teaching process. With this figure, the country ranks at the tail end and rank 24 in Europe.

Barriers to computer use in class in Greece 2006

Percentage of all teachers ***not*** *using computers in class*	Total EL	Total EU25	Educational Level				Type of locality		
			Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
Lack of computers	49.5	48.8	53.4	40.6	41.8	*36.7**	54.3	51.1	42.6
Lack of adequate content/material	16.7	20.3	16.4	18.5	14.5	*16.7**	17.1	11.5	17.8
Lack of content in national language	4.0	8.6	3.5	3.2	6.2	*6.0**	2.3	5.7	5.6
Lack of adequate skills of teachers	31.7	22.5	31.5	33.7	29.2	*19.9**	30.9	27.3	34.2
No or unclear benefits	3.4	16.2	3.2	4.6	3.9	*15.8**	2.9	5.4	3.3
Lack of interest of teachers	5.3	8.9	5.3	9.2	3.4	*10.4**	6.1	8.3	3.3
Subject does not lend itself to being taught via computers	22.4	24.4	19.6	26.7	31.4	*53.6**	22.2	20.6	23.1
Other	11.1	21.3	9.9	11.7	15.9	*3.2**	11.6	15.6	9.2

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers not using computers in class;* ***Question:*** *Q12: "Why do you not use computers and/or the internet when teaching in class?"* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases.*

Attitudes on the Usefulness of ICT use in Teaching in Greece 2006

Percentage of teachers saying computers/internet should be used for …	Total EL	Total EU25	Educational Level				Type of locality		
			Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
Letting pupils do exercises and practise	61.5	79.9	63.9	55.1	59.1	56.2	66.4	53.3	58.2
Letting pupils retrieve information in a self-directed manner	69.9	85.0	70.0	69.3	68.0	65.8	72.2	75.7	65.0
Teaching about office tools	32.0	61.3	30.9	28.1	35.8	38.2	35.7	27.3	28.8
Collaborative and productive work by pupils	75.6	80.5	78.8	74.3	67.0	63.3	72.2	72.6	80.7
Computer/internet should not be used for any of these in teaching	1.1	0.6	0.6	2.1	1.7	1.5	0.5	4.6	0.8

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers;* ***Question:*** *Q13: "What do you think for what computers and the internet should be used for in teaching?"*

Access, Competence and Motivation for Using ICT and the Internet in Schools

Access

Interestingly, the majority of Greek teachers are more or less satisfied with the technical access means at their schools: 66% state that their school is well equipped with computers and 72% express the opinion that their internet connection is fast enough. The situation seems to be worse in primary schools, where 41% of the teachers are not satisfied with the ICT equipment they have.

A substantial 83% of all teachers (the figure is even higher in primary schools) wish there were better support and maintenance actions taken. In terms of content more than 50% state problems with respect to finding adequate learning materials (51%) but only a third argue that existing materials are of poor quality (35%).

Competence in using ICT

Greek teachers feel most competent in using e-mail and using a text processor programme but are less confident with downloading and installing software and with using presentation software packages.

Primary school teachers (65%) and lower secondary teachers (66%) seem to be less ICT competent than those in upper secondary (62%) and vocational schools (37%). This compares to a European average of 42% and shows another weakness in the ICT equipment and use in Greek schools.

Motivation for ICT use in Schools

Despite all the above insufficiencies 91% of Greek teachers see significant learning benefits for pupils using computers in class and as many say that pupils are more motivated and attentive when computers and the internet are used in class.

Teachers' access, competence and motivation for using ICT in class 2006

Percentage of teachers agreeing or strongly agreeing:	Total EL	Total EU25	Educational Level				Subject of teaching					
			Primary	Lower secondary	Upper secondary	Vocational	General primary	Literature and languages	Humanities and social sciences	Science, maths, computer sciences	Physical, artistic, crafts education	Vocational education
Access												
Our school is well equipped with computers [a]	66.3	74.2	59.3	77.9	78.6	90.7	58.2	74.8	77.3	78.9	*85.0**	*78.7**
The internet connection we have is sufficiently fast [b]	72.3	77.2	72.0	75.7	72.0	86.4	71.6	80.1	79.7	68.7	*77.8**	*78.1**
Better technical maintenance and support is required in our school [c]	83.2	64.8	84.3	80.7	76.3	66.3	84.8	83.0	69.9	81.0	*86.7**	*73.0**
Existing teaching materials on the Internet are of poor quality [d]	35.1	29.9	34.2	35.3	35.7	47.9	34.3	29.8	29.9	40.0	*33.4**	*36.0**
It is hard to find adequate learning materials for teaching [e]	51.4	38.7	49.1	52.1	53.4	50.6	50.1	47.0	54.4	55.5	*54.3**	*59.1**
Motivation												
Pupils are more motivated and attentive when computers and the internet are used in class [f]	90.6	86.3	90.9	91.8	88.2	93.1	90.9	91.5	92.6	87.8	*95.8**	*93.7**
Using computers in class does not have significant learning benefits for pupils [g]	16.3	20.7	13.9	20.6	23.1	14.6	13.4	21.5	17.8	20.7	*18.6**	*25.9**
Competence												
Teachers in our school do not have sufficient computer skills [h]	65.7	42.0	65.1	66.9	62.1	36.7	65.6	68.7	50.7	66.9	*64.7**	*55.3**
Competence / computer skills (Percentage of teachers who feel very confident at…)												
Using text processors [i]	62.2	65.0	55.8	62.4	73.1	*80.3**	54.3	*63.4**	*76.0*	73.8	*64.0**	*39.9**
Creating electronic presentations [j]	47.8	34.0	38.3	52.3	65.7	*61.6**	35.9	*45.6**	*51.1*	66.6	*57.0**	*26.5**
Using e-mail [k]	59.9	65.9	52.4	66.9	68.3	*68.6**	51.7	*59.2**	*60.2*	74.5	*47.2**	*48.4**
Downloading and installing software [l]	37.7	35.8	29.5	44.6	52.4	*55.5**	27.1	*27.3**	*34.9*	56.5	*35.9**	*30.5**

Source: LearnInd CTS 2006; **Base:** a-h All teachers; i -l Teachers using computers in class **Question:** a-h Q14, i-l Q11. **Notes:** "xx.x*": based on at least 10 and less than 50 cases.

ICT Readiness of Teachers – the ACM Model

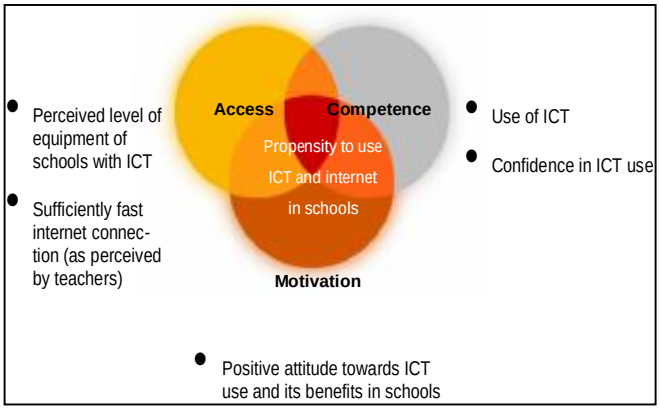
The ACM model as developed by Viherä and Nurmela (2001)[4] was applied in LearnInd to generate a typology according to the "propensity to the use of computers and internet by teachers in classroom situations at schools".

The typology in the figure below takes account of the three main categories of preconditions which need to be given for a school to make use of computers and the internet in the teaching process in classrooms, computer labs etc.

These are: access (to computers and the internet at school), competence (in using the computer software and the internet, and applying it for teaching purposes), and motivation (gauged through the attitude that using computers in classrooms results in significant learning benefits).

Any attempt to group the classroom teachers according to their propensity to becoming users of computers and the internet in their teaching processes needs to take account of these three dimensions. In the present application of the ACM model data from the Classroom Teacher Survey (CTS) was used. Therefore "access" for instance is to be understood as a perceived level of computer equipment at schools and teachers' satisfaction therewith rather than an objective measure of equipment status.

The Access-Competence-Motivation Model



38% of European teachers dispose of sufficient access to the internet at school, the necessary competence in using ICT in class and are motivated to its use. With 24% of the teachers belonging to this group, Greece ranks at 16th, placing the country more to the bottom end of European countries. Overall the UK with 60% ranks top and Latvia with 15% finds itself at the very end.

The as yet insufficient internet connection in many schools and a lack of motivation of teachers for using ICT are the most critical issues for a wider uptake of computers and the internet in schools in Europe. 20% of European teachers indicate insufficient computer equipment and the low speed of internet connection at their school as key barriers. 14% show a lack of motivation, i.e., they are of the opinion that using computers in class does not result in significant learning benefits.

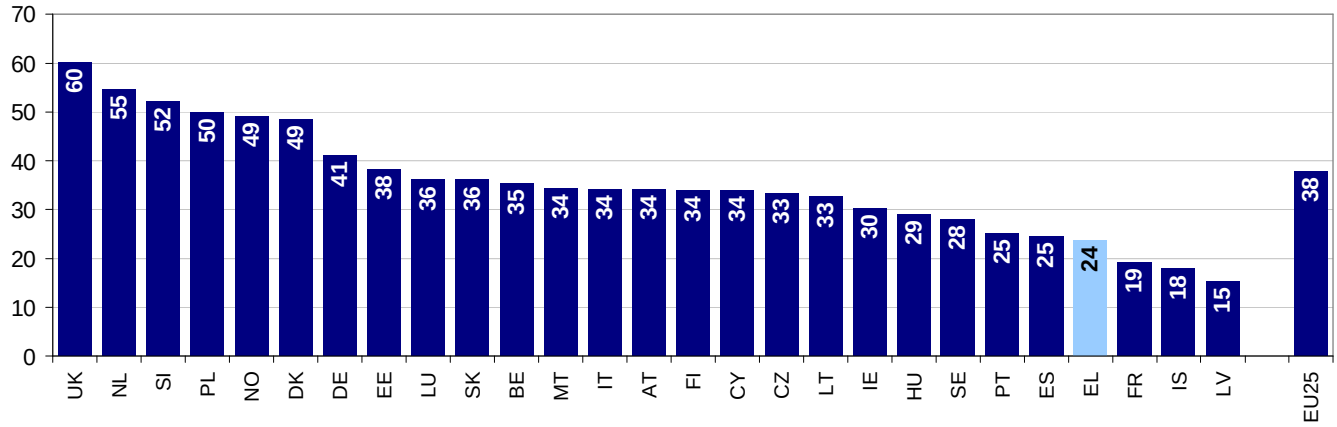
Access, Motivation and Competence of Teachers for Using ICT in Schools in Greece 2006

EL	EU25	Access	Competence	Motivation
6.9	4.3	~~Access~~	~~Competence~~	~~Motivation~~
6.0	3.9	**Access**	~~Competence~~	~~Motivation~~
5.1	9.7	~~Access~~	**Competence**	~~Motivation~~
14.1	5.0	~~Access~~	~~Competence~~	**Motivation**
7.4	13.7	**Access**	**Competence**	~~Motivation~~
12.9	4.8	**Access**	~~Competence~~	**Motivation**
23.8	20.7	~~Access~~	**Competence**	**Motivation**
23.7	37.9	**Access**	**Competence**	**Motivation**
100	100			

Percentage of teachers. ***Source:*** *LeanInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *See endnote* [5]

The situation in Greece is different. Here the key problems are lack of access to ICT and lack of access in combination with lack of teacher's ICT competence. In terms of ICT readiness it is therefore not surprising that Greek teachers find themselves only at rank 24 in Europe.

ICT Readiness of Teachers in Greece: Percentage of Teachers Fully Ready to use Computers in Class (ACM Indicator) 2006



Source: *LeanInd CTS 2006;* ***Base:*** *All teachers.* ***Question:*** *See endnote 5*

ANNEXES

Methodology Report

Universe / Sample population

In order to assure the comparability of school levels in all countries UIS-OECD-EUROSTAT "Mapping of national education programmes to ISCED 97 for school academic/year 2002/2003" [6] was used for composing the sample frame. Based on this, each country divided its school system into ICSED codes and made different combinations that existed in its country.

Sampling frame and method

The sample was composed using official databases, which contained contact data of schools. In the majority of countries the sample was drawn from a database received from the Ministry of Education.

For each country a separate template of sample frames was composed by TNS Emor. These templates contained data about school types across regions as well as location type. School types were defined based on the ISCED codes provided in UIS-OECD-EUROSTAT. Location type distribution was made according to the Eurostat type of locality classification which differentiates densely populated, intermediate and thinly populated municipalities[7]. Apart from that, each country was divided into 3-7 regions depending on the size of a country.

Based on the data provided by countries, TNS Emor composed quotas for each country. Two level stratification was used – quotas for first stage, random sample for second. The quotation for region by school type and location type was endorsed. Simple random selection was conducted by the local agency or the local source of the contact base. Both private and public schools were included in the sample. It was also obligatory to include schools of other teaching languages than the official language of a country in the sample.

Simple random sampling was used inside a quota cell. This means that if the quota for primary schools in region1 was 100 and the total number of primary school in this region was 800, then a random sample selection was be made among those 800 schools. This covered also both private and public schools and schools of other teaching languages than the official language of a country.

No more than 50% of interviews could be made in one school level. At least 10% of respondents had to be from schools, which provided professional/vocational or combined programme of vocational and upper secondary level education (in case a country did not have special quota for those schools). It did not matter whether vocational education level was coded as ISCED 3 or ISCED 4.

There were no duplications in samples of head teacher and classroom teacher surveys. This was only allowed in countries with small universe sizes (e.g. Malta, Cyprus, Iceland, Estonia, Latvia etc) and in cases where the last quota cells were very difficult to achieve or there were not enough schools of a certain type. The priority was to include as many different schools as possible. In both surveys, 5 attempts were made before giving up and only if the respondent refused was this person not contacted again.

The CATI programme generated a randomly chosen letter. The interviewer asked for the person with a surname that started on the generated letter. If there was more than one teacher whose surname started with the selected letter, the person who was first alphabetically was chosen. If the correct person was not available, an appointment was made. At least 5 attempts were made, before taking another teacher.

Only in Malta, due to instructions dictated by the Education Department, would the Head Teacher randomly select a teacher who would be available for an appointment during which they would be interviewed.

Number of interviews conducted (HTS / CTS)

Country		Head Teachers	Classroom teachers
BE	Belgium	450	807
CZ	Czech Republic	500	1000
DK	Denmark	315	848
DE	Germany	450	901
EE	Estonia	400	851
EL	Greece	500	1000
ES	Spain	518	1022
FR	France	501	869
IE	Ireland	403	626
IT	Italy	500	900
CY	Cyprus	150	600
LV	Latvia	451	902
LT	Lithuania	457	908
LU	Luxemburg	82	277
HU	Hungary	500	1000
MT	Malta	100	200
NL	Netherlands	515	890
AT	Austria	320	450
PL	Poland	500	1000
PT	Portugal	450	900
SI	Slovenia	253	460
SK	Slovakia	502	1000
FI	Finland	318	601
SE	Sweden	200	450
UK	United Kingdom	450	905
IS	Iceland	177	424
NO	Norway	494	708
TOTAL		**10456**	**20499**

Fieldwork

Fieldwork was coordinated by the TNS Emor and conducted in cooperation with its local TNS offices excluding Iceland, Cyprus, Austria, Slovenia and Malta where TNS does not have offices. In these countries partners with whom TNS had previous experience were used.

Pilot interviews prior to the regular fieldwork were conducted with 20 schools in both target groups in Estonia and Greece in February 2006, in order to test the questionnaire (structure, comprehensibility of questions).

Between March and April 2006, surveys among head teachers (head teacher survey - HTS) and classroom teachers (CTS) were carried out in 27 European countries. TNS Emor was responsible for the fieldwork.

Weighting schemes

After the fieldwork, weighting coefficients were computed using region, location type and school type.

Statistical accuracy of the survey: confidence intervals

Statistics vary in their accuracy, depending on the kind of data and sources. A "confidence interval" is a measure that helps to assess the accuracy that can be expected from data. The confidence interval is the estimated range of values on a certain level of probability of error. Confidence intervals for estimates of a population fraction (percentages) depend on the sample size, the probability of error, and the survey result (value of the percentage) itself. Further to this, variance of the weighting factors has negative effects on confidence intervals.

The calculation of confidence intervals is based on the assumption of (quasi-) infinite population universes. In practice, however, in some countries and for some school levels the complete population of schools consists of only several hundred or even a few dozen of schools. In some cases, literally each and every school within a country-school type cell was contacted and asked to participate in the survey. This means that it is practically impossible to achieve a higher confidence interval through representative school surveys in which participation is not obligatory.

Country Background Data

Greece is a country with a below European average GDP per Capita, an average live expectancy and a low total fertility rate. Compared to other European countries, the share of expenditure on education is low. With a ratio of 13/1 the pupil / teacher ratio is among the best in Europe.

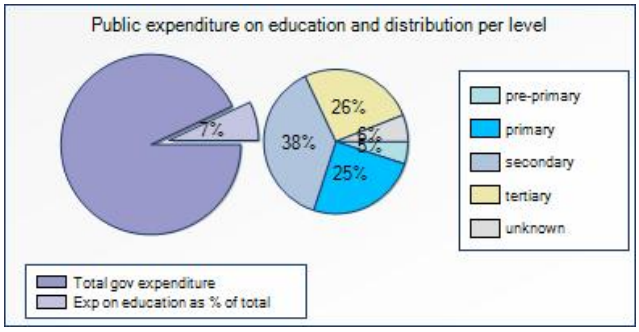
General Population Data for Greece 2002/03[8]

Total population (000)	10,970
Annual population growth rate (%)*	0.4
Population 0-14 years (%)	15
Rural population (%)*	39
Total fertility rate (births per woman) *	1.3
Infant mortality rate (0/00) *	5
Life expectancy at birth (years) *	78
GDP per capita (PPP) US$ *	18,767
GDP growth rate (%)*	3.9
* World Bank World Development Indicators	

Resources for Education in Greece 2002/03

Pupil / teacher ratio (primary)	12
Public expenditure on education :	
as % of GDP	4.0
as % of total government expenditure	7.0
Distribution of public expenditure per level (%):	
pre-primary	5
primary	25
secondary	38
tertiary	26
unknown	6

Resources for Education in Greece 2002/03



The Educational System in Greece[9]

In 2003, 75% of the population aged 29 or under were in education. Young people in the compulsory education age group numbered 1,135,151. The language of instruction is Greek.

In 2002/03, 93.5% of pupils attended public-sector schools and 6.4% private non-grant-aided schools. Private primary and secondary schools are recognised as equivalent to state schools, and remain under the supervision and inspection of the Ministry of National Education and Religious Affairs. They are fully self-financed. There are also special private schools offering education to foreign nationals residing in Greece. There are no private higher education institutes.

The Ministry of National Education and Religious Affairs formulates and implements legislation, coordinates and evaluates regional services, administers financial support, approves primary and secondary school curricula and appoints teaching staff. The prefectures (or, in large prefectures, the education offices) supervise schools, facilitate co-ordination between schools and have responsibility for school buildings and equipment. The head teacher co-ordinates school activities and is responsible for ensuring that the school satisfies legal requirements. Teachers' councils implement curricular regulations and monitor student attendance and discipline. School committees have administrative responsibilities and manage budgets for heating, lighting, school repairs and equipment. Higher education institutions are self-governing, under the auspices of the Ministry of National Education and Religious Affairs.

Prefectures and education offices are responsible for inspection. School advisers provide guidance to teachers. A new system of assessment is being phased in with law 2525/97 PEKESES – Regional Centres to Support Educa-

tional Planning – and law 2986/02. According to this law, evaluation of the educational work of schools falls upon the Education Research Centre (KEE) and the Pedagogical Institute (PI).

The use of ICT in Education[10]

Over the last few years, there has been a development of educational exchanges and the twinning of Greek Primary and Secondary schools with schools abroad; these include a large range of activities such as communication on the Internet and the exchange of projects which usually leads to the exchange of visits.

Greek schools and teachers participate in the South Eastern Mediterranean sea Project (SEMEP), which is a Greek initiative, and combines interdisciplinary teaching and holistic learning. On top of that, Greece is one of the founding members of the eLearning programme EUN – European Schoolnet, an organisation established in 1997 aimed at the co-operation and communication of all the Ministries of Education of the EUN member states on issues related to e-Learning and the use of ITC in education.

A core aspect of the educational reform is systematic professional development of teachers by means of in-service training. Characteristic is the training of 75,000 teachers in ICT during this and the next school year, taking place in the context of similar successful actions developed in the recent past.

The Study

There is a lack of information on the actual use of ICT for learning in schools and for supporting political action in potential future programmes. It is necessary to clarify matters such as the educational vision of heads of schools, the current impact of ICTs on teachers' practice, support and training and on other factors for success in e-learning.

The objective of the study is to obtain estimates for the eEurope 2005 indicator on e-learning "number of pupils per computer with Internet connection (broadband/non-broadband)" and relate it to other possible indicators of educational use of ICT in compulsory education (e-learning in schools). The study looks at how Information and Communication Technologies (ICT) are used in schools.

The study is a continuation of the earlier benchmarking exercise for eEurope 2002.

It involved two surveys. Firstly of head teachers to obtain information on the schools and then of teachers to focus on their use of ICTs in the teaching process

This exercise is part of the Information Society monitoring and benchmarking process for which the Commission in cooperation with the Council defined benchmarking indicators.

Country Briefs

This document has been prepared by **empirica** based on own desk research and the above mentioned primary data sources: Head Teacher Survey (HTS) 2006 and Classroom Teacher Survey (CTS) 2006 in the EU25 member states, Iceland and Norway.

Altogether 27 LearnInd Country Briefs are available in a common format, one for each member of the enlarged European Union, Norway and Iceland.

A final report has also been developed. It includes approximately 100 exhibits, more than 250 data tables and a report about the key results.

You can access and download these documents in PDF format (for free) from http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm.

More information

Check our results and achievements on: http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm. If you wish to be provided with more details, or to receive news and updates, please contact us at: **learnind@empirica.com** or get in touch with us.

empirica Gesellschaft für Kommunikations- und Technologieforschung mbH

(Project Co-ordinator)

Oxfordstr. 2, 53111 Bonn, Germany, Tel.: +49 228 985 30 0, **www.empirica.com**

TNS Emor

Ahtri 12, 10151 Tallinn, Estonia, Tel.: +372 6268 519, Fax: + 372 6268 501

---

1 Note that "in class" means during lessons while teaching and does not denote a particular location such as a classroom.

2 Base (100%) = all teachers who have used a computer in class in the last 12 months.

3 This section includes some comparisons of the Eurobarometer Flash 94/1001 and 95/102 results from 2001 with those from the LearnInd surveys from 2006. Please bear in mind that the figures are not directly comparable due to the use of slightly different approaches and methodologies.

4 Viherä, M-L, Nurmela, J (2001) "Communication Capability Is an Intrinsic Determinant for Information Age", in Futures, Volume 33, Issue 3-4:245-265.

5 Synthetic indicators: Access: Q14 (2) "Our school is well equipped with computers" and Q14 (3) "The internet connection we have is sufficiently fast ".

Competence: Q11 How confident do you feel... a) using a text processor, b) creating a presentation c) using e-mail, d) downloading and installing software. Threshold: Average of 2.5 or more on a 1-4 confidence scale

Motivation: Q14 (8); disagree with "Using computers in class does not result in significant learning benefits".

For full question wordings refer to questionnaire.

6 http://forum.europa.eu.int/Public/irc/dsis/edtcs/library?l=/public/unesco_collection/programmes_isced97&vm=detailed&sb=Title

7 Densely populated area refers to a set of closely related local units, each one of which having a density greater than 500 inhabitants per km2, and the total population of which being of at least 50 000 inhabitants; Intermediate area refers to a set of closely related local units that do not pertain to a densely populated area, each one of which having density greater than 100 inhabitants per km2, and where the total population is at least of 50 000 inhabitants or it refers to a set that is adjacent to a highly populated area. Thinly populated area (rural): refers to a set of closely related local units that are not part of a densely populated area, or of an intermediate area. (A set of local areas totalling less than 100 km², not reaching the required density, but entirely enclosed within a densely-populated or intermediate area, is to be considered to form part of that area. If it is enclosed within a densely-populated area and an intermediate area it is considered to form part of the intermediate area).

8 Source: http://www.uis.unesco.org/profiles/selectCountry_en.aspx (visited 28 March 2006)

9 Source: http://www.eurydice.org/Documents/struct2/frameset_EN.html (visited: 28 March 2006)

10 Source: http://europa.eu.int/comm/education/policies/2010/nationalreport_en.html (visited: 9 May 2006)